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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,630	01/03/2002	J. Blake Scott	2006-419	6763
27569	7590	09/01/2009		
PAUL AND PAUL 2000 MARKET STREET SUITE 2900 PHILADELPHIA, PA 19103			EXAMINER MARCANTONI, PAUL D	
			ART UNIT 1793	PAPER NUMBER
			NOTIFICATION DATE 09/01/2009	DELIVERY MODE ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* J. BLAKE SCOTT<sup>1</sup>

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Appeal 2009-009393  
Application 10/037,630  
Technology Center 1700

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Decided: August 28, 2009

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Before CHARLES F. WARREN, TERRY J. OWENS, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

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<sup>1</sup> The Examiner has not had the USPTO official electronic files reflect the change in inventorship of this Application as including Billy R. Scott, and Dallas N. Little as specified in our Remand entered August 26, 2008, in Appeal 2008-4703 in this Application (“Remand”). Rem. 2 and 3; *see* Examiner’s Answer mailed December 24, 2008 at 3. Thus, only J. Blake Scott is listed here.

## DECISION ON APPEAL

Applicant appeals to the Board from the decision of the Primary Examiner finally rejecting claims 1 through 20 in the Office Action mailed April 6, 2006. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2008).

Claim 1 illustrates Appellant's invention of a process for constructing load-bearing structures incorporating drilling cuttings, and is representative of the claims on appeal:

1. A process for constructing load-bearing structures incorporating drilling cuttings, said process comprising operations of:

- (1) forming a particulate mixture comprising drilling cuttings; and
- (2) at least one of groups (2.1) and (2.2) of suboperations, said group (2.1) comprising suboperations of

(2.1.1) mixing said particulate mixture comprising drilling cuttings with at least one stabilizer selected from the group consisting of:

- (A) quicklime;
- (B) hydrated lime;
- (C) Portland Cement;
- (D) Class C fly ash;
- (E) cement kiln dust;
- (F) lime kiln dust;
- (G) Class F fly ash; and
- (H) other pozzolans

to form a cementitious second mixture,

(2.1.2) forming said cementitious second mixture into the shape and size of the load-bearing structure; and

(2.1.3) causing the shaped and sized second mixture formed in suboperation (2.1.2) to undergo pozzolanic reaction to form said load-bearing structure, said load-bearing structure having sufficient resistance to

rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch;

and said group (2.2) comprising suboperations of: (2.2.1) mixing said particulate mixture comprising drilling cuttings with at least one of formed asphalt and emulsified asphalt to form an asphaltic second mixture; (2.2.2) forming said emulsified asphalt second mixture into the shape of the load-bearing surface; and

(2.2.3) causing the shaped and sized second mixture formed in suboperation (2.2.2) to form said load-bearing structure by curing said shaped asphaltic second mixture, said load-bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch.

The Examiner relies upon the evidence in this reference (Ans. 5):<sup>2, 3</sup>

Polston US 6,706,108 B2 Mar. 16, 2004

Appellant requests review of the ground of rejection under 35 U.S.C. § 103(a) advanced on appeal by the Examiner (App. Br. 9): appealed claims 1 through 5, 8 through 10, 13, and 16 through 20 over Polston (Ans. 5).

The Examiner withdrew the ground of rejection with respect to appealed claims 6, 7, 11, 12, 14, and 15. Ans. 4.

Appellant argues the original ground of rejection of appealed claims 1 through 20 on groups of claims: claims 1 through 6 and

<sup>2</sup> We consider the Appeal Brief filed November 3, 2008, the Examiner's Answer mailed December 24, 2008, and the Reply Brief filed November 1, 2009. *See* Rem. 3.

<sup>3</sup> We have not considered the United States Patents discussed at pages 16-17 of the Answer which have not been included in the statement of the ground of rejection advanced on appeal. Ans. 5. See *In re Hoch*, 428 F.2d 1341, 1342 n. 3, (CCPA 1970); cf. *Ex parte Raske*, 28 USPQ2d 1304, 1304-05 (BPAI 1993).

8 through 10; claim 7; claim 11; claim 12; claim 14; and claims 13 and 15 through 20. App. Br. 10 and 18-20. In view of the ground of rejection advanced by the Examiner and the new ground of rejection we enter below, we decide this appeal based on claims 1, 6, 7, 11, 12, 14, and 15. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

We affirm the ground of rejection of appealed claims 1 through 5, 8 through 10, 13, and 16 through 20. We further reinstate the ground of rejection with respect to appealed claims 6, 7, 11, 12, 14, and 15 as a new ground of rejection pursuant to our authority under 37 CFR § 41.50(b). *See* Manual of Patent Examining Procedure § 1213.02 (8th ed., Rev. 3, August 2005).

#### Issue

The issue in this appeal is whether Appellant has shown that the evidence in Polston does not support the Examiner's conclusion of prima facie obviousness with respect to the claimed process for constructing load-bearing structures encompassed by representative appealed independent claim 1 in the ground of rejection advanced by the Examiner as well as encompassed by appealed dependent claims 6, 7, 11, 12, 14, and 15 which we newly reject here.

#### Claim Interpretation

The issue entails the interpretation of claims 1, 6, 7, 11, 12, 14, and 15 by giving the terms thereof the broadest reasonable interpretation in their ordinary usage in context as they would be understood by one of ordinary skill in the art in light of the written description in the Specification unless another meaning is intended by Appellant as established therein, and without

reading into the claims any disclosed limitation or particular embodiment. *See, e.g., In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007); *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004), and cases cited therein; *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997).

The plain language of independent claim 1 specifies a process which comprises at least the operations or steps of forming any sized particulate mixture comprising at least any manner of drilling cuttings that are “produced by drilling through and/or into natural soil or rock” as defined in the Specification (Spec. 1:22-24), and either of the following two sets of suboperations or steps. The first set of steps “comprising” at least mixing the particulate mixture with at least one stabilizer of the specified group consisting of, among other things, quicklime, hydrated lime, Portland Cement, Class C fly ash, cement kiln dust, lime kiln dust, and Class F fly ash forming a cementitious mixture; the cementitious mixture is shaped and sized into any manner of load-bearing structure; a pozzolanic reaction, e.g., formation of calcium-silicate-hydrate and calcium-aluminate-hydrate cementitious products, forms the load-bearing structure (Spec. 7:2-7). The second set of steps “comprising” at least mixing the particulate mixture with at least, among other things, an emulsified asphalt; shaping and sizing the mixture into any manner of load-bearing structure; and curing the load-bearing structure.

We note here that the open-ended term “comprising” in the preamble and body of the claims opens the claims to include processes which contain any manner of additional steps and components, such as, for example, the

inclusion of any asphalt component in the first set of steps and the inclusion of any stabilizer(s) in the second set of steps. *See, e.g., Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (“The claimed composition is defined as comprising - meaning containing at least - five specific ingredients.”); *In re Baxter*, 656 F.2d 679, 686 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”).

The terms “load-bearing structures” and “load-bearing structure” in the preamble of claim 1 and in the body of the claims are not defined with respect to structure in the claims or in the Specification, and thus encompass any manner of load-bearing structure, including a single layer load-bearing structure, subject to other limitations in claim 1. In this respect, claim 1 specifies only that the “load-bearing structure” is formed by shaping and sizing prior to curing in either of the two sets of steps, and has at least the specified “resistance to rutting” property. *See Spec.*, e.g., 4:25-30 and 24:17 to 25:7. Dependent claims 12, 14, and 15 further specify an “unconfined compressive strength of at least 100 psi” and a thicknesses based on the resilient modulus of each of three subgrades on which the “load-bearing structure” is “constructed.” The term “subgrade” appears from the Specification to have its common, dictionary meaning of “[t]he level layer of rock or earth upon which the foundation of a road or railway is laid.”<sup>4</sup> *See Spec.*, e.g., 25:8-10.

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<sup>4</sup> *See, e.g.,* subgrade, *The American Heritage Dictionary of The English Language* 1724 (4th ed., Boston, Houghton Mifflin Company, 2000).

Dependent claims 6 and 11 specify that the stabilizer is a mixture of Class C fly ash and Portland Cement, wherein Class C fly ash is first mixed with the particulate mixture comprising drilling cuttings after which Portland Cement is mixed therewith. Dependent claim 7 specifies the amount of Portland Cement is at least 1.0% and the amount of Class C fly ash is at least 2.0%, without specification of the unit of measure in either instance, with the ratio of Class C fly ash to Portland Cement of at least 0.5:1.0 but not more than 10:1.0. The Specification discloses the amounts of these ingredients “as a Percentage of Solids” without specifying either weight or volume. Spec. 13, Table 1. For purposes of considering the merits of the ground of rejection *only*, we will use the weight percent unit of measure because we can do so without speculation, recognizing that our *conditional* interpretation does not limit claim 7. *Cf. In re Steele*, 305 F.2d 859, 862-63 (CCPA 1962); *Ex parte Saceman*, 27 USPQ2d 1472, 1474 (BPAI 1993). The specified ranges of these stabilizers do not include an upper limit.

In these respects, we find no basis in the language of the claims or in the disclosure in the Specification on which to read any embodiment in the Specification into the claims as a limitation. *See, e.g., In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989).

#### Findings of Fact

We find Polston would have disclosed to one of ordinary skill in this art, as illustrated by embodiments depicted in Figure 2, a method for making a road base material by mixing, among other things, oil and gas waste



materials, such as well drilling cuttings, aggregate material, and at least one binder. Polston, e.g., Abstract, col. 1, ll. 10-18 and 42-57, col. 2, ll. 1-49, col. 2, l. 66 to col. 3, l. 18, col. 4, ll., 21-24, and 35-42, col. 7, ll. 32-36, col. 8, ll. 28-40, col. 11, ll. 26-53, and col. 12, l. 57 to col. 14, l. 7.

Polston discloses the binder(s) can be “cement, fly ash, lime, kiln dust or the like, [which] will achieve an irreversible pozzolanic chemical reaction necessary for a road base,” and “[a]n asphalt emulsion may be included in the binder to manufacture asphalt stabilized road base.” Polston col. 2, ll. 45-49. Polston further discloses “adding such as portland cement (22) and a binder such as asphalt emulsion (24),” wherein “Portland cement and asphalt emulsion are added to waste mix (14) and mixed into the pug mill (18) or may be added separately to the plug mill (18).” Polston col. 7, ll. 31-36 and Fig. 2, and col. 9, ll. 29-31; *see also* col. 8, ll. 13-16 and 57-59.

Polston discloses “[s]olid waste from the oil and gas materials typically contains naturally occurring aluminas and silicas found in soils and clays” and “[t]he added pozzolan will typically contain either silica or calcium ions necessary to create calcium-silica-hydrates and calcium-aluminate-hydrates,” which “are essentially the same hydrates that form during the hydration of Portland Cement.” Polston col. 2, ll. 51-61.

Polston discloses “[t]he aggregate including natural stone aggregate or non-hazardous industrial waste adds structure strength and bulk to the final mix.” Polston col. 2, ll. 62-65. The aggregate can range from ½" to 4" and is added in varying amounts, preferably combined with the oil and gas waste

in an approximate ratio of one-to-one and 20/80 to 80/20. Polston col. 3, ll. 2-11, col. 7, ll. 57-66 and Fig. 2, col. 8, ll. 16-19, and col. 9, ll. 3-10.

Polston discloses the road base material provides ‘an environmentally safe roadbed’ when the composition is applied “to a road base location,” which is “a stabilized road base . . . of superior grade . . . that will not leach” substances in violation of the Clean Water Act. Polston, e.g., col. 3, ll. 13-18, col. 4, ll., 21-24 and 35-42. Polston discloses:

If an oil and gas waste treatment (28) is used, then the treated oil and gas waste/road base composition material (29) are mixed with the aggregate (61) and portland cement (22) and emulsion (24) in a ratio that results in a stabilized road bed product. That ratio is determined by testing leachability of the roadbase for . . . [materials]; also for strength by testing for compressive strength and vheem [sic] stability, pH and chlorides. The ratio my be between 20/80 and 80/20, typically 50/50. . . .

. . . .

. . . The stabilizer (22) is, typically, comprised of portland cement. A binder (24) is also provided, typically asphalt emulsion. While the portland cement and asphalt can be added in desired quantities, it has been found that portland cement added in [sic] range of ½-10% of the final product weight and asphalt emulsion added in [sic] range of ½-10% of the final product weight provides good characteristics for the finished product. The oil/aggregate waste mix (14), binder (24), and stabilizer (22) are mixed and cured and the final product, stabilized road base (20) as determined by compressive strength testing and leachate testing results. Portland cement and asphalt emulsion are added to waste mix (14) and mixed into the pug mill (18) or may be added separately to the pug mill (18). . . .

Polston col. 8, l. 55 to col. 9, l. 31, and Fig. 2.

### Opinion

We considered the totality of the record in light of Appellant's arguments with respect to claims 1, 6, 7, 11, 12, 14, and 15 and the ground of rejection advanced on Appeal. *See, e.g., In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)); *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992) (“After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.”) (citing, *inter alia*, *In re Spada*, 911 F.2d 705, 707 n.3 (Fed. Cir. 1990)).

We are of the opinion Appellant has not shown that the evidence in Polston does not support the Examiner's conclusion of *prima facie* obviousness with respect to the claimed process for constructing load-bearing structures encompassed by representative appealed independent claim 1 and by newly rejected appealed dependent claims 6, 7, 11, 12, 14, and 15.

### Claim 1

Appellant submits that one of ordinary skill in the civil engineering arts would understand that Polston's term “road base” does not fall within the claim term “load bearing structure” in claim 1 because “Polston uses the

term ‘road base’ as a short form for ‘road base material’ or ‘road base composition.’” App. Br. 14-17; *see also* Reply Br. 6--8. Appellant points to the Little Declaration under 37 C.F.R. § 1.132 “[f]or . . . [an] authoritative explanation of the normal meaning of the term ‘road base’ in civil engineering.”<sup>5</sup> App. Br. 16.

We find Declarant Little attests:

A civil engineer of ordinary skill would recognize that [Polston] teaches the manufacture of “road bases” and of compositions for making road bases by spreading the compositions on a road base site and that the practical use of a road base is to support an overlaying material, usually called “surface layer”, that constitutes the final outer surface of a road ready to be used. The road base, together with the overlying surface, and the natural earth subgrade and any other intermediate layers that may be present also supports traffic loads after the construction of the road is completed and the road begins to be used. After a road base is surfaced, the surface as well as the road base will be the part of the road that is susceptible to being rutted or plastically deformed by traffic loads. Therefore, rutting resistance is not confined to the base layer but affects all layers as they interact as a system. . . .

Decl. ¶ 8(2).

The Examiner submits that one of ordinary skill in this art would have understood from Polston “that a road base can still be construed or interpreted to mean a load bearing structure,” and argues the claimed resistance to rutting limitation “would have been a property expected because [Polston] mixes the same components to form a road base which is a load bearing structure.” Ans. 5-6. The Examiner further submits that

“[e]ven if a road base is a sublayer, it still bears the load underneath the road top layer,” and points to the disclosure at page 4, lines 25-30, of the Specification that the composition encompassed by claim 1 “can be converted and/or incorporated into excellent high-load-bearing civil engineering structures such as vehicle roads and drilling pads.” Ans. 8.

We interpreted the claim term “load bearing structure” in claim 1 to include any manner of structure, including a single layer load-bearing structure, which can be formed by shaping and sizing the mixed particulate composition prior to curing by either or both sets of steps, and have the specified resistance to rutting property. *See above* pp. 5-6. We are not persuaded by Appellant’s arguments and Declarant Little’s testimony that the claim term “load bearing structure” is limited to multi-layer structures, as indeed, on this record, there is no basis in either the language of claim 1 or the disclosure in the Specification to impart such a limitation into claim 1, as the Examiner points out. *See above* p. 7.

With respect to the teachings one of ordinary skill in this art would find in Polston, it is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in the art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826-27 (CCPA 1968), presuming skill on the part of this person, *In re Sovish*,

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<sup>5</sup> Declaration under 37 C.F.R. § 1.132 by Dr. Dallas N. Little (“Little Declaration”), executed January 13, 2006, and submitted February 6, 2006. App. Br. 31.

769 F.2d 738, 742-43 (Fed. Cir. 1985). Indeed, a person of ordinary skill is not an automaton but is a person of ordinary creativity. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

We found above that Polston would have disclosed to one of ordinary skill in the load-bearing structure arts, inclusive of civil engineers of ordinary skill as Declarant Little attests, a road base composition and the use of that road base composition to form a road base when the composition is applied to a road base location. Polston would have provided this person with the direction to arrive at workable and optimum amounts of ingredients in the compositions which can be adjusted based on, among other things, *compressive strength testing* to obtain desired properties. *See above* p. 9. Indeed, we find that even Declarant Little attests that a civil engineer of ordinary skill would recognize Polston “teaches the manufacture of ‘road bases’ and of compositions for making road bases by spreading the compositions on a road base site.” *See above* p. 11. Thus, Appellant’s contention that Polston’s disclosure is limited to “road base materials” and “compositions” but not to the “road base” produced therewith is without merit.

Consequently, on this record, we are of the opinion that Polston’s road base layer produced with the disclosed road base composition is a “load-bearing structure” as this term is used in the appealed claims. Furthermore, Appellant does not dispute that Polston’s road base material or composition falls within the claimed particulate mixtures that include one or more stabilizers and can include emulsified asphalt as specified in the two sets of

steps encompassed by claim 1, as we interpreted this claim. *See above* pp. 5-6. *See App. Br.*, e.g., 10-18.

Accordingly, we determine that as the Examiner submits, one of ordinary skill in this art routinely following the teachings of Polston would have arrived at a process for constructing road base load-bearing structures that incorporate drilling cuttings in a particulate mixture which includes stabilizers, that reasonably appears to be identical or substantially identical to the claimed process for constructing road base load-bearing structures that incorporate drilling cuttings in a particulate mixture which includes stabilizers encompassed by appealed claim 1, even though the claimed resistance to rutting property obtained with the claimed process is not expressly taught by Polston. Thus, the burden shifts to Appellant to patentably distinguish the claimed process over that taught by Polston by convincing argument and/or objective evidence. *See, e.g., Spada*, 911 F.2d at 708 (“[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.”); *In re Best*, 562 F.2d 1252, 1254-56 (CCPA 1977); *In re Skoner*, 517 F.2d 947, 950-51 (CCPA 1975) (“Appellants have chosen to describe their invention in terms of certain physical characteristics . . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference].” (citation omitted)); *see also, e.g., Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (“That the ‘813 patent discloses a multitude of effective combinations does not render any

particular formulation less obvious. This is especially true because the claimed composition is used for the identical purpose.”).

We are of the opinion Appellant has not carried this burden. We disagree with Appellant’s position that one of ordinary skill in the load-bearing structure arts, inclusive of civil engineers of ordinary skill, would not have reasonably expected to arrive at the claimed resistance to rutting property specified in claim 1. App. Br. 10-14. We agree with Appellant that, as established by Declarant Little’s testimony, a civil engineer of ordinary skill would not find in Polston specific disclosure of *compress strength testing* methods or rut resistance data obtained by laboratory testing leading to the claimed resistance to rutting property. App. Br. 10-11, citing Little Decl. ¶ 8(1).

However, in this respect, we find that ASTM test methods for determining Unconfined Compress Strength (UCS) were known in the art as disclosed in the Specification. Spec., e.g., 18:22-24, 20:27-29, 25:25 to 26:12, 27: 8-11, and Table 2. Thus, one of ordinary skill in this art armed with knowledge of such known test methods would have applied the same following the direction in Polston to determine appropriate amounts of ingredients in the particulate mixtures by *compress strength testing* to arrive at the desired compress strength properties for the road base load-bearing surface, with a reasonable expectation of success in obtaining the desired properties. See, e.g., *In re O’Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988) (“For obviousness under § 103, all that is required is a reasonable expectation of success.” (citations omitted)). Indeed, Appellant does not argue and Declarant Little does not attest that testing methods known in the



art would be expected by one of ordinary skill in this art to require more than routine experimentation to arrive at a desired compressive strength for Polston's road base.

Thus, we are not convinced by Appellant's arguments and Declarant Little's testimony that explicit directions for load bearing and rutting resistance testing and laboratory data based thereon must be disclosed by Polston in order for one of ordinary skill in this art to follow Polston's direction to *compress strength test* the road base with a reasonable expectation of success when this person would have inferred that art recognized ASTM procedures can be used for such purposes with a reasonable expectation of success. See, e.g., *KSR*, 550 U.S. at 421; *Fritch*, 972 F.2d at 1264-65; *O'Farrell*, 853 F.2d at 903-04; *Sovish*, 769 F.2d at 742-43; *Preda*, 401 F.2d at 826-27.

We do agree with Appellant that not every road base within Polston's teachings would have the claimed rutting resistance property specified in claim 1. App. Br. 12-14. However, Appellant does not argue that a road base exhibiting the claimed resistance to rutting property cannot be obtained by routinely following Polston's process for constructing road base load-bearing structures that incorporates drilling cuttings in a particulate mixture and employing *compress strength testing* methods as directed by Polston.

#### Claims 6 and 11

Appellant does not submit separate argument with respect to appealed claim 6. App. Br. 10-18. Appellant does submit separate arguments with respect to claim 11. App. Br. 18-19. We interpreted these claims as

encompassing similar stabilizer ingredients and thus consider these claims together. *See above* pp. 6-7.

We determine one of ordinary skill in this art routinely following the teachings of Polston would have reasonably been led to use more than one stabilizer from among the categories disclosed in admixture with the other ingredients. *See above* pp. 7-8. *See, e.g., KSR*, 550 U.S. at 420-421 (a patent claiming a combination of elements known in the prior art is obvious if the improvement is no more than the predictable use of the prior art elements according to their established functions); *Merck v. Biocraft Labs.*, 874 F.2d at 807; *In re Corkill*, 771 F.2d 1496, 1497-1500 (Fed. Cir. 1985); *In re Kerkhoven*, 626 F.2d 846, 850 (CCPA 1980) (“It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. *In re Susi*, . . . 440 F.2d 442, 445, 169 USPQ 423, 426 ([CCPA] 1971); *In re Crockett*, . . . 279 F.2d 274, 276-77, 126 USPQ 186, 188 ([CCPA] 1960). As this court explained in *Crockett*, the idea of combining them flows logically from their having been individually taught in the prior art.”); *O’Farrell*, 853 F.2d at 903-04. This person would have further have been led by Polston to mix the stabilizers with the other ingredients in any order. *See above* pp. 7-8.

We determine Polston’s generic disclosure of “fly ash” would have reasonably suggested to one of ordinary skill in this art to use any known fly ash which is capable of participating in a pozzolanic reaction, including the known Class C fly ash.

On this record, and contrary to Appellant's position, Polston provides the teachings which would have led one of ordinary skill in this art to the claimed processes encompassed by these claims. App. Br. 18-19.

#### Claim 7

Contrary to Appellant's position, this claim is directly dependent on claim 6. App. Br. 18.

We *conditionally* interpreted claim 7 to specify the weight percent unit of measure for the stated percent amounts. *See above* p. 7.

We found that the weight percent of each of Portland Cement and asphalt emulsion taught by Polston range from ½% to 10%. *See above* p. 9.

We determine that one of ordinary skill in this art would have used Polston's weight percent range for an additional stabilizer in view of the same ranges disclosed therein for the Portland Cement and asphalt emulsion stabilizers. *See above* p. 9. We are of the view one of ordinary skill in this art would be led to use any weight percent within Polston's range in formulating the amounts of stabilizers used in the particulate mixtures, including ratios of the amounts of two stabilizers, in determining workable and optimum ranges for these ingredients which are identified in the reference as result effective variables. *See, e.g., In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) (“[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.”); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) (“[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”).

The claimed ranges encompassed by claim 7 overlap with Polston's Portland Cement range, thus requiring evidence to establish nonobviousness. *See, e.g., In re Harris*, 409 F.3d 1339, 1343 (Fed. Cir. 2005); *In re Peterson*, 315 F.3d 1325, 1329-30 (Fed. Cir. 2003); *In re Geisler*, 116 F.3d 1465, 1469-70 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1577-78 (CCPA 1990), and cases cited therein. Appellant does not present such evidence. App. Br. 18.

#### Claims 12, 14, and 15

We interpreted these dependent claims as specifying the same limitations. *See above* p. 6. Appellant submits the same argument with respect to each claim. App. Br. 19-20.

We determined above that one of ordinary skill in this art would have been led by Polston to determine appropriate amounts of ingredients in the particulate mixtures by *compress strength testing* to arrive at the desired compress strength properties for the road base load-bearing surface, with a reasonable expectation of success in obtaining the desired properties. *See above* p. 15. We found that Polston would have further led this person to apply the road base composition to any road base location, including any subgrade, and determine the desired compress strength properties for the road base load-bearing surface by *compress strength testing*. *See above* p. 9.

On this record, and contrary to Appellant's position, Polston provides the teachings which would have led one of ordinary skill in this art to the claimed processes encompassed by these claims. App. Br. 19-20.

#### Conclusion

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in Polston with Appellant's countervailing evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claims 1 through 5, 8 through 10, 13, and 16 through 20 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

With respect to appealed claims 6, 7, 11, 12, 14, and 15, having considered Appellant's arguments as they pertain to the new ground of rejection of these claims, we are of the opinion that the claimed invention is *prima facie* obvious over Polston as we have applied this references to these claims. Thus, the burden of going forward with respect to the new ground of rejection of appealed claims 6, 7, 11, 12, 14, and 15 under 35 U.S.C. § 103(a) over Polston remains with Appellant.

#### Summary

The Primary Examiner's decision is affirmed, and we have entered a new ground of rejection pursuant to our authority under 37 C.F.R. § 41.50(b).

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b).

37 C.F.R. § 41.50(b) provides "[a] new ground of rejection shall not be considered final for purposes of judicial review."

37 C.F.R. § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of

the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceedings will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the application be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v) (2008).

*AFFIRMED*

*37 C.F.R. § 41.50(b)*

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